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10/624,524	07/23/2003	Yong-Hee Lee	P-0483	6671

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EXAMINER	
TRAN, NHAN T	

ART UNIT	PAPER NUMBER
2622	

DATE MAILED: 11/16/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/624,524	LEE ET AL.	
	Examiner	Art Unit	
	Nhan T. Tran	2622	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *7/23/03, 7/31/03, 3/16/04 & 10/27/04*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1-24* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1-24* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *23 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Priority

1. Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

2. The information disclosure statements (IDS) submitted on 7/23/2003, 7/31/2003, 3/16/2004 & 10/27/2004 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements are being considered by the examiner.

Claim Objections

3. Claim 1 is objected to the following informalities: in line 6 of claim 1, the limitations of "a viewing direction the display" should be corrected to read as -- a viewing direction of the display --.

Claim 2 is objected to because of the following informalities: in line 4 of claim 2, the limitations of "when the folder is an open state" should corrected to read as – when the folder is in an open state – or – when the folder is at an open state --.

Claim 7 is objected to because of the recitation of "the protrusion" which should be corrected to read as – a protrusion --.

Claim 8 is objected to because of the recitations of "the first terminal portion" and "the second terminal portion" in lines 3 & 5 of claim 8. These limitations should be corrected to read as – a first terminal portion -- and – a second terminal portion --, respectively. Furthermore, it appears that the claimed "the first terminal portion" and "the second terminal portion" are written to mean the antecedent "first portion" and "second portion", respectively. If this is the case, the limitations "the first terminal portion" and "the second terminal portion" should be respectively corrected to read as – the first portion – and – the second portion -- to provide consistent claim terminologies.

Appropriate correction is required.

Note: in view of the objection to claim 8, the limitations "the first terminal portion" and "the second terminal portion" are interpreted in two different ways as set forth below.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

4. Claim 3 is rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for the camera module 10 to be mounted such that an angle of approximately 30^0 is formed between the target imaging direction D normal (perpendicular line) to the front surface 50 of the protrusion 20 and **the normal**

(perpendicular line) to the rear surface of the main body 2 (see Figs. 4 & 5, paragraphs [18], [38] and [41]), does not reasonably provide enablement for **"the camera module is mounted such that there is formed an angle of 30° between the imaging direction and the rear surface of the main body."** The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the invention commensurate in scope with this claim.

As clearly disclosed in Figs. 4 & 5, paragraphs [18], [38] and [41], the imaging direction is the direction D, which is perpendicular to the surface 50 of the protrusion 20, cannot form an angle of 30^0 to the rear surface of the main body 2. In fact, the imaging direction D only forms an angle of 30^0 to the **normal** (perpendicular line) to the rear surface of the main body 2. This is always true by drawing a perpendicular line to the rear surface of the main body 2 (best view if using Fig. 5) and drawing the imaging direction D perpendicular to the surface 50 of the protrusion 20. A resulting angle formed between the lines is equal to the angle $\theta 3$, which is 30^0, by the principle of geometry law.

5. *Note: The following rejection sections contain multiple art rejections to claims 1, 4, 8, 9 and 14-17.*

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

6. Claims 1, 8, 9 & 14-24 are rejected under 35 U.S.C. 102(e) as being anticipated by Wada (US 6,965,413 B2).

Regarding claim 1, Wada discloses a mobile terminal with a camera (a camera phone 1 shown in Figs. 2A-2C and abstract), comprising:

a main body (2);

a folder (3) foldably connected to the main body (via hinge 8) and having a display (6) formed thereon (Figs. 2A-3C and col. 2, line 51 – col. 3, line 16);

a camera module (11) mounted at one side (e.g., a rear side) of the main body for imaging a target (taking a picture of an object; col. 3, lines 5-8), wherein the camera module is mounted such that a viewing direction of the display (the direction that is normal or perpendicular to the viewing surface of display 6) and an imaging direction of the camera module (the direction of optical axis of camera 11) are substantially parallel (see Fig. 3A; col. 3, lines 50-54 and note that the viewing direction of the display and the imaging direction of the camera module are substantially parallel when the display 6 is rotated 180^0 to face out in the 180^0 folded configuration as shown in Fig. 3A).

Regarding claim 8, Wada discloses a subscriber unit (a camera phone 1 in which the phone is subscribed with a phone number to make a phone call or communicate with other phones as disclosed in col. 5, lines 28-32), comprising:

a first portion (2);

a second portion (3) foldably connected along folding axis (axis of hinge 8 shown in details in Fig. 4) to [the] a first terminal portion (a portion near the hinge 8 of the first portion 2 shown in Figs. 2A & 4 *or* the first portion 2 itself in view of the claim objection above) to allow open and closed configurations (Figs. 2A-4 and col. 3, lines 9-60);

a display (6) on [the] a second terminal portion (a portion near the hinge 8 of the second portion 3 shown in Figs. 2A & 4 *or* the second portion 3 itself in view of the claim objection above);

a camera (11) mounted on the first terminal portion (Figs. 2A-2C and col. 2, lines 51-61) such that a display viewing direction (the direction that is normal or perpendicular to the viewing surface of display 6) is substantially parallel to a camera imaging direction (the direction of optical axis of camera 11; see Fig. 3A and col. 3, lines 50-54. It is noted that the display viewing direction is substantially parallel to the camera imaging direction when the display 6 is rotated 180^0 to face out in the 180^0 folded configuration).

Regarding claim 9, Wada clearly discloses that the camera (11) is mounted at an upper portion of the first portion (Fig. 2A and col. 2, lines 58-61).

Regarding claims 14 & 15, also disclosed by Wada in Figs. 2A, 2C, 3A & 3C and col. 3, lines 9-11 that the display (6) comprises a flat panel display of a liquid crystal display (LCD).

Regarding claim 16, as discussed in claims 1 & 8 above, Wada discloses the display viewing direction comprising a direction that is substantially orthogonal (perpendicular) to a viewing surface of the display (Figs. 2A, 2C, 3A & 3C).

Regarding claim 17, as discussed in claims 1 & 8 above, Wada discloses the camera imaging direction (the optical axis direction of the camera 11) that is substantially parallel to a bisector (a bisecting line) of a field of view of the camera. See Figs. 2A-3C and col. 2, line 51 – col. 3, line 8 and col. 3, lines 65-66. It is noted that since the imaging direction is the direction of the optical axis of camera 11, at least one bisecting line of a field of view of the camera must be substantially parallel to the imaging direction regardless the camera phone 1 being held at any position for the camera to capture an aimed object.

Regarding claim 18, Wada further discloses that at least a section (3a shown in Fig. 4) of the second portion (3) is rotatable along an axis of rotation (8h) that is orthogonal to the folding axis (8d). See Figs. 3C & 4 and col. 3, lines 26-54.

Regarding claim 19, Wada clearly discloses that the rotatable section of the second portion is rotatable by at least 180 degrees (see col. 3, lines 26-54).

Regarding claim 20, as disclosed by Wada is that the second portion has a first closed configuration (Fig. 3B) in which the rotatable section of the second portion is positioned so that the display is facing a front surface of the first portion (col. 3, lines 11-15), and a second closed configuration (Fig. 3A) in which the rotatable section of the second portion is rotated by substantially 180 degrees (col. 3, lines 50-54) with respect to its position in the first closed configuration.

Regarding claim 21, Wada clearly discloses a camera control interface (jog dial 14 shown in Figs. 2B & 2C) positioned so that it can be accessed when the first portion is in the first or second closed configuration (see col. 2, line 62 – col. 3, line 8).

Regarding claim 22, it is also clear that the camera control interface is positioned at a side surface of the first portion. See Fig. 2B and col. 2, lines 62-65.

Regarding claim 23, Wada further discloses that the camera comprises a still camera (taking a picture of an object). See col. 3, lines 5-8 and col. 4, lines 43-49.

Regarding claim 24, Wada further discloses that the camera comprises a video camera (capturing images to provide live-view of video images on the display 6 for monitoring as described in col. 4, lines 38-49).

7. Claims 1, 2, 4, 6, 8-11 & 14-17 are rejected under 35 U.S.C. 102(e) as being anticipated by Yoshida et al. (US 6,690,417 B1).

Regarding claim 1, Yoshida et al. (hereafter referred as "Yoshida") discloses a mobile terminal with a camera (a camera phone shown in Figs. 1 & 2 and col. 5, lines 24-30), comprising:

a main body (the main body shown in Figs. 1 & 2 except for the portion having speaker 105 and display 107);

a folder (the portion having speaker 105 and display 107) foldably connected to the main body and having a display (107) formed thereon (Figs. 1 & 2; col. 41-48);

a camera module (indicated by lens 108) mounted at one side of the main body for imaging a target (Fig. 1 and col. 6, lines 25-32), wherein the camera module is mounted such that a viewing direction of the display (direction A shown in Fig. 1 when the folder is open as shown in Fig. 2) and an imaging direction of the camera module (direction C illustrated in Fig. 1) are substantially parallel.

Regarding claim 2, Yoshida further shows that the camera module (108) is mounted at an upper side of a rear surface of the main body (see Fig. 1 and note that

the rear surface of the main body is considered as the surface having the imaging lens 108, flash 109 and shutter button 102, and the front surface is the surface having control button 110 shown in Fig. 2) at a predetermined angle (a right angle to a bottom surface of the main body) such that the imaging direction forms an angle of approximately 90 degrees with respect to a rear surface of the folder when the folder is in an open state (Fig. 2 shows the imaging direction C being substantially perpendicular to the rear surface of the folder when the folder is in an open state). See col. 5, lines 41-48 and col. 6, lines 25-44.

Regarding claim 4, Yoshida also discloses that a protrusion (a protruding portion at camera module 108 shown in Fig. 1) with a predetermined angle (a right angle to the bottom surface of the main body *or* an angle formed by a tangent line to a side surface of the main body) is formed at an upper portion of the rear surface of the main body, wherein the protrusion has a front surface (the surface which overlaps with the surface having camera module 108, flash 109 and shutter button 102) that is positioned so that it is substantially level with a rear surface of the folder when the folder is opened (see Fig. 2 in which the rear surface of the folder is substantially level with the front surface of the protrusion when the folder is open).

Regarding claim 6, as disclosed in Fig. 1 of Yoshida, the camera module (108) is mounted at the protrusion so that the imaging direction (direction C) of the camera

makes an angle of approximately 90 degrees (perpendicular) with respect to the front surface of the protrusion.

Regarding claim 8, Yoshida discloses a subscriber unit (a camera phone which is subscribed with a phone number as discloses in col. 5, line 66 – col. 6, line 9), comprising:

a first portion (a main body shown Figs. 1 & 2 except for the portion having speaker 105 and display 107);

a second portion (the portion having speaker 105 and display 107) foldably connected along folding axis (axis of a hinge) to the first terminal portion (a portion at the hinge of the first portion *or* the first portion itself in view of the claim object above) to allow open and closed configurations (Figs. 1 & 2 and col. 5, lines 41-48); a display (107) on the second terminal portion (a portion at the hinge of the second portion *or* the second portion itself in view of the claim object above);

a camera (indicated by lens 108) mounted on the first terminal portion such that a display viewing direction (direction A shown in Fig. 1 when the display is open as shown in Fig. 2) is substantially parallel to a camera imaging direction (direction C). See col. 6, lines 25-45.

Regarding claim 9, it is clearly seen in Fig. 1 of Yoshida, the camera is mounted at an upper portion of the first portion.

Regarding claim 10, as seen in Fig. 1 of Yoshida, a section of the first portion in which the camera is mounted wider than other sections of the first portion (the section at camera module 108 is wider than other sections at flash 109 and shutter button 102).

Regarding claim 11, Yoshida discloses that the section of the first portion in which the camera is mounted comprises a protruding section (Fig. 1) with a front surface that is substantially level with a rear surface of the second portion when the second portion is in the open configuration (Fig. 2). Note the analysis of claim 4.

Regarding claims 14 & 15, Yoshida further discloses that the display (107) is a flat panel of a liquid crystal display (LCD). See Fig. 2 and col. 6, line 11.

Regarding claim 16, as seen in Figs. 1 & 2 of Yoshida, the display viewing direction (viewing direction A) comprises a direction that is substantially orthogonal to a viewing surface of the display.

Regarding claim 17, also shown in Fig. 1 of Yoshida, the camera imaging direction (imaging direction C) comprises a direction that is substantially parallel to a bisector of a field of view of the camera.

8. Claims 1 & 4 are rejected under 35 U.S.C. 102(e) as being anticipated by Watanabe et al. (US 2004/0090552 A1).

Regarding claim 1, Watanabe et al. (hereafter referred as "Watanabe") discloses a mobile terminal with a camera (a camera phone shown in Figs. 4A & 4B and paragraph [0002]), comprising:

a main body (body 106 shown in Fig. 4B, and note that the main body is considered as only a right half part 106 divided by a vertical line);

a folder (a whole housing 104 shown in Fig. 4B) foldably connected to the main body and having a display (112) formed thereon (see paragraph [0072]);

a camera module (110) mounted at one side of the main body for imaging a target (taking a picture of an object), wherein the camera module is mounted such that a viewing direction (direction E) of the display and an imaging direction (direction a) of the camera module are substantially parallel. See Fig. 4B and paragraphs [0072]-[0075] in which the imaging direction and viewing direction are always parallel for both states A and B.

Regarding claim 4, Watanabe also discloses, in **Fig. 4B,** a protrusion (a whole left half part divided by the vertical line on the body 106) with a predetermined angle (a slanted angle at camera module 110) is formed at an upper portion of the rear surface of the main body (an upper portion of the rear surface of main body 106; it should be noted that the rear surface of the main body is the surface indicated by the dividing vertical line between the left part and the right part at 106), wherein the protrusion has a front surface (the slanted surface where the camera is mounted thereon) that is

positioned so that it is substantially level with a rear surface of the folder when the folder is opened (in state A shown in Fig. 4B). See paragraphs [0072]-[0075].

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

9. Claims 7, 12 & 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yoshida et al. (US 6,690,417 B1) in view of Ban et al. (US 7,076,271 B2).

Regarding claim 7, although Yoshida discloses a protrusion having a front surface for mounting a camera module (108) as shown in Fig. 1 (also see the analysis of claim 4), Yoshida does not disclose a mirror that is mounted at the front surface of a protrusion for reflecting a user when the user images himself/herself.

However, as taught by Ban et al. (referred as "Ban") in Fig. 2B, a camera phone is disclosed in which a mirror (10) is mounted on the same surface with a camera module (9) so as to enable the user to see himself/herself during self-photographing (see Ban, col. 3, lines 32-51).

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide a mirror on the front surface of the protrusion in Yoshida in view of the teaching of Ban so as to enable the user to see himself/herself

during self-photographing, thereby obtaining accurate framing and avoiding out-of-view image.

Regarding claim 12, the limitations of this claim are also met by the analysis of claim 7 in which the mirror 10 taught by Ban inherently comprises a reflecting surface.

Regarding claim 13, as analyzed in claims 7 & 12, the combined teachings of Yoshida and Ban disclose the reflecting surface comprising a mirror (10) mounted adjacent to the camera (9) such that a normal (a perpendicular line) to the surface of the mirror is substantially parallel to the camera imaging direction (see Ban, Fig. 2B). Note that the imaging direction is the direction of optical axis of the imaging lens for both Yoshida and Ban, which is always parallel to the normal to the surface of the mirror.

10. Claim 5 is rejected under 35 U.S.C. 103(a) as being unpatentable over Watanabe et al. (US 2004/0090552 A1).

Regarding claim 5, although Watanabe teaches the front surface (slanted surface) of the protrusion at the camera module 110 is formed at a predetermined angle with the rear surface of the main body in the second embodiment (Fig. 4B) as discussed in claim 4, Watanabe is silent about the slanted surface of the protrusion being formed at an angle of approximately 30° to the rear surface of the main body.

However, in the first embodiment (Fig. 2), Watanabe teaches that a slanted surface (6d) is formed such that the imaging direction of camera module and viewing direction of display unit are substantially parallel when the display is open to an β angle. Watanabe suggests that the β angle is preferably **150°** so that an image taken from window (9) into the camera unit (10) and displayed on the display unit (3) can easily be observed, and thus the intended object can be taken accurately for image capturing (see paragraphs [0053] and [0055]-[0056]). By this teaching, the slanted surface (6d) shown in Fig. 2 is formed at an angle of approximately 30° to the rear surface of the main body (6) by geometry law of 180° – 150° = 30°.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to make the front surface (slanted surface) of the protrusion at the camera module (110) in Fig. 4B incline at an angle of approximately 30° to the rear surface of the main body in the recognition of the suggestion from the first embodiment of Fig. 2 so that an image taken by the camera unit (110) and displayed on the display unit (112) can easily be observed, and thus the intended object can be taken accurately for image capturing without departing from the scope of the invention.

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Nhan T. Tran whose telephone number is (571) 272-7371. The examiner can normally be reached on Monday - Friday, 8:00am - 4:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on (571) 272-7593. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

NT

NHAN T. TRAN
Patent Examiner